



(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:
27.08.2014 Bulletin 2014/35

(51) Int Cl.:
H04L 1/00 (2006.01) H04B 1/00 (2006.01)

(43) Date of publication A2:
23.11.2011 Bulletin 2011/47

(21) Application number: **11002558.2**

(22) Date of filing: **28.03.2011**

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR
Designated Extension States:
BA ME

(72) Inventors:
• **Nieto, John Wesley**
Rochester, NY 14610 (US)
• **Furman, William Nelson**
Fairport, NY 14450 (US)

(30) Priority: **29.03.2010 US 749082**

(74) Representative: **Schmidt, Steffen**
Wuesthoff & Wuesthoff
Patent- und Rechtsanwälte
Schweigerstrasse 2
81541 München (DE)

(71) Applicant: **Harris Corporation**
Melbourne, FL 32919 (US)

(54) **Wireless communication device with waveform configuration and related methods**

(57) A mobile wireless communications device may include an antenna, a transceiver coupled to the antenna, and a controller coupled to the transceiver. The controller may be configured to determine a received signal characteristic, and to configure parameters of a waveform for adjacent forward transmission blocks to be transmitted as sequential forward transmission blocks and based up-

on the received signal characteristic. Each forward transmission block may have a preamble portion and an associated body portion. The controller may be further configured to set the preamble portion of each forward transmission block to communicate the parameters of the configured waveform.

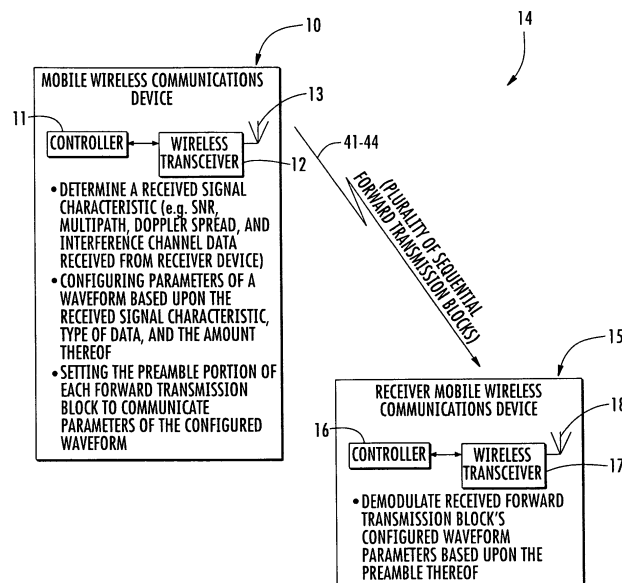


FIG. 1



EUROPEAN SEARCH REPORT

 Application Number
EP 11 00 2558

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	US 2003/002495 A1 (SHAHAR MENASHE [IL] ET AL) 2 January 2003 (2003-01-02)	1,4,5,8	INV.
Y	* paragraphs [0024], [0057], [0062], [0055] *	2,3,9,10	H04L1/00 H04B1/00
X	US 2006/176972 A1 (KIM JOONSUK [US] ET AL) 10 August 2006 (2006-08-10)	1,4,5,8	
	* paragraphs [0025], [0044], [0052], [0054], [0069], [0071], [0072], [0082] *		
Y	US 2005/099992 A1 (SATO MASANORI [JP]) 12 May 2005 (2005-05-12)	2,9	
	* paragraphs [0008], [0058], [0059]; figure 9 *		
Y	WO 2009/157481 A1 (KYOCERA CORP) 30 December 2009 (2009-12-30)	3,10	
	* the whole document *		
E	-& US 2011/096823 A1 (SAHARA TORU [JP]) 28 April 2011 (2011-04-28)	3,10	TECHNICAL FIELDS SEARCHED (IPC)
	* paragraphs [0014], [0015], [0020], [0051] - [0057] *		H04L
A	US 2007/298826 A1 (OSHIMA YOSHITAKA [JP] ET AL) 27 December 2007 (2007-12-27)	2,9	
	* paragraphs [0096], [0121] *		
A	US 2006/209937 A1 (TANAKA YOSHINORI [JP] ET AL) 21 September 2006 (2006-09-21)	3,10	
	* paragraphs [0018], [0021], [0024] *		
The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
Munich		27 March 2014	Stolte, Norbert
CATEGORY OF CITED DOCUMENTS			
T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document			

EPO FORM 1503 03.82 (P04G01)



Application Number

EP 11 00 2558

CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing claims for which payment was due.

☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due and for those claims for which claims fees have been paid, namely claim(s):

☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

☐ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.

☐ As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.

☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:

☒ None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:

1-5, 8-10

☐ The present supplementary European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims (Rule 164 (1) EPC).

**LACK OF UNITY OF INVENTION
SHEET B**

Application Number

EP 11 00 2558

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. claims: 1-5, 8-10

Configuring the parameters of the waveform further based upon a type of data in the body portion of each forward transmission block (as defined in claim 2)

2. claim: 6

Configuring the parameters of the waveform using different bandwidths for each forward transmission block (as defined in claim 6).

3. claim: 7

Each forward transmission block further comprises a channel estimate portion; and varying a length of the channel estimate portion for each forward transmission block (as defined in claim 7).

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 11 00 2558

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

27-03-2014

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2003002495 A1	02-01-2003	AU 4347601 A US 2003002495 A1 WO 0167702 A1	17-09-2001 02-01-2003 13-09-2001
US 2006176972 A1	10-08-2006	EP 1689107 A2 TW I351845 B US 2006176972 A1	09-08-2006 01-11-2011 10-08-2006
US 2005099992 A1	12-05-2005	CN 1516945 A EP 1453263 A1 JP 3591726 B2 JP 2003174485 A KR 20040069964 A US 2005099992 A1 WO 03049392 A1	28-07-2004 01-09-2004 24-11-2004 20-06-2003 06-08-2004 12-05-2005 12-06-2003
WO 2009157481 A1	30-12-2009	CN 102077644 A JP 4955614 B2 JP 2010010969 A KR 20110020848 A US 2011096823 A1 WO 2009157481 A1	25-05-2011 20-06-2012 14-01-2010 03-03-2011 28-04-2011 30-12-2009
US 2011096823 A1	28-04-2011	CN 102077644 A JP 4955614 B2 JP 2010010969 A KR 20110020848 A US 2011096823 A1 WO 2009157481 A1	25-05-2011 20-06-2012 14-01-2010 03-03-2011 28-04-2011 30-12-2009
US 2007298826 A1	27-12-2007	CN 101057421 A JP 2006140927 A TW I286893 B US 2007298826 A1 WO 2006051771 A1	17-10-2007 01-06-2006 11-09-2007 27-12-2007 18-05-2006
US 2006209937 A1	21-09-2006	EP 1455476 A2 JP 4250002 B2 JP 2004274103 A US 2006209937 A1	08-09-2004 08-04-2009 30-09-2004 21-09-2006

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82